

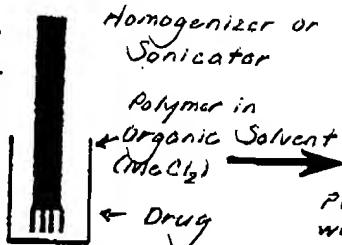
First Emulsion
(water-in-oil)

Homogenization
speed
time
temperature

Protein Solution
Drug volume or mass
concentration

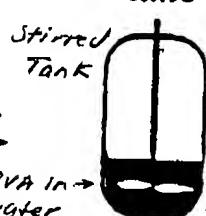
Polymer
Solution

Organic solvent MeCl₂ volume
polymer weight
polymer MW



Emulsification
Conditions

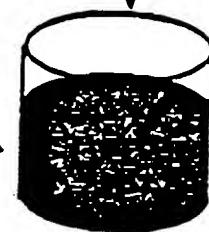
Stir speed
time



Emulsification

Solution PVA MW
PVA weight %
water volume
MeCl₂ volume
Organic solvent
temperature

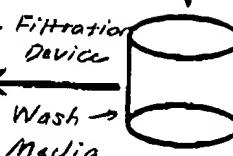
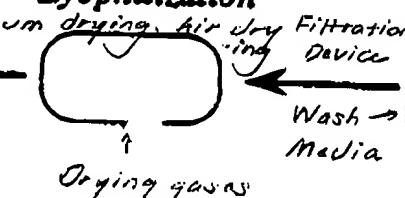
Stirred Tank
Excess water →



Hardening
Bath
Water volume
time
Temperature

Drying

Lyophilization



Diafiltration

wash volume
wash medium
Temperature & washing

Fill microspheres
in vials

Release
Studies

Oxygen gasses

Drying System

Figure 3